AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Claim 1 (currently amended): A network architecture supporting periodic and aperiodic transmission of data comprising:

a network databus; and

a plurality of Network Interface Controller (NIC) modules capable of communicating over said network databus, at least one of said plurality of NIC modules acting as a master timing NIC module configured (i) to allocate a first time interval for transmission of periodic data over said databus, (ii) to dynamically allocate an aperiodic data transmission time interval, and (iii) to dynamically assign variable time ~~intervals~~ slots within the aperiodic data transmssion time interval for transmission of aperiodic data on said network databus, said master timing NIC module including a means of determining what bandwidth is assigned to the aperiodic data transmissions based on priority, length and sequence of frames.

Claim 2 (original): The network architecture of claim 1 wherein said master NIC is configured to guarantee a certain amount of bandwidth for the transmission of aperiodic data.

Claim 3 (original): The network architecture of claim 1 wherein said network bus comprises a dual bus structure.

Claim 4 (original): The network architecture of claim 1 further comprising a plurality of network devices communicably coupled to said plurality of NIC modules.

Claim 5 (original): The network architecture of claim 1 wherein said master timing NIC module comprises:

a master NIC configured to receive requests for aperiodic data transmissions from one or more of said plurality of network devices; and

a priority table for storing a predetermined set of priorities assigned to requests for aperiodic data, said table accessible by said master NIC; and

a transceiver means coupled to said master NIC and providing a signal pathway between said master NIC and said network databus.

Claim 6 (original): The network architecture of claim 5 wherein said transceiver means comprises:

a receive buffer for reading data from said network databus; and

a transmit buffer for writing data on said network databus.

Claim 7 (original): The network architecture of claim 5 wherein each of said plurality of NIC modules comprises: a NIC configured to receive requests for aperiodic data transmission from one or more of said plurality of network devices; and

a table associated with said NIC for storing a predetermined set of priorities assigned to requests for aperiodic data, said table accessible by said master NIC; and

a transceiver means coupled to said master NIC and providing a signal pathway between said master NIC and said network databus.

Claim 8 (previously presented): The network architecture of claim 7 wherein said master NIC is configured to transmit the contents of said priority table to each of said tables associated with each of said plurality of NIC.

Claim 9 (currently amended): A network for transmitting data between network interface controllers in a communications system, said network comprising:

a first network interface controller;

a second network interface controller coupled to said first network interface controller, wherein one of said first and second network interface controller comprises a master timing network interface controller;

a plurality of modules coupled to either of said first and second network interface controllers, wherein said modules are capable of requesting transmission of aperiodic data; and

a means for prioritizing an order of transmission of said data and for dynamically allocating variable transmission intervals for each transmission requested based on such prioritization and desired bandwidth,

wherein the master network interface controller is configured (i) to allocate a first time interval for transmission of periodic data over said databus, (ii) to dynamically allocate an aperiodic data transmission time interval, and (iii) to dynamically assign variable time ~~intervals~~ slots within the aperiodic data transmssion time interval for transmission of aperiodic data on said network databus.

Claim 10 (original): The network of claim 9 wherein said master timing network interface controller includes said means for prioritizing said order of transmission.

Claim 11 (original): The network of claim 9 wherein said means for prioritizing comprises a table, wherein said table comprises prioritization information.

Claim 12 (original): The network of claim 9 wherein data is transmittable from one of said modules to another of said modules through said communication system.

Claim 13 (original): The network of claim 9 wherein the said data is aperiodic.

Claim 14 (original): The network of claim 13 wherein said aperiodic data is isochronous, asynchronous, or isochronous and asynchronous.

Claim 15 (original): The network of claim 13 wherein said aperiodic data from at least one of said modules comprises a bandwidth, wherein said bandwidth is guaranteed transmission throughout said communications system.

Claim 16 (currently amended): A network for transmitting data between modules in a communications system, wherein said data comprises periodic data and aperiodic data, said network comprising;

a master network interface controller, wherein said master interface controller is configured (i) to allocate a first time interval for transmission of periodic data over said databus, (ii) to dynamically allocate an aperiodic data transmission time interval, and (iii) to dynamically assign variable time ~~intervals~~ slots within the aperiodic data transmssion time interval for transmission of aperiodic data on said network databus;

a first backplane coupled to said master network interface controller, at least one first module coupled to said first backplane, wherein data is transmittable from one of said first modules along said first backplane to other first modules and said master network interface controller;

a network databus coupled to said master network interface controller;

at least one network interface controller coupled to said network databus;

a second backplane coupled to said network interface controller;

at least one second module coupled to said second backplane, wherein data is transmittable from one of said second modules along said second backplane to other second modules and said network interface controller; and

wherein said first and second modules are capable of requesting transmission of said aperiodic data over said network databus, wherein said requests of transmission are dynamically prioritizable by said master network interface controller.

Claim 17 (original): The network of claim 16, wherein said aperiodic data comprises isochronous or asynchronous data.

Claim 18 (original): The network of claim 16, wherein said master network interface controller comprises a data transmission prioritization table, wherein said table comprises priority information regarding said aperiodic data.

Claim 19 (original): The network of claim 18, wherein said priority information comprises data block size and type of data, wherein said type of data comprises isochronous and asynchronous data.

Claim 20 (original): The network of claim 18 wherein said aperiodic data is transmittable from a first module to another first module or a second module in the network.

Claim 21 (original): The network of claim 18, wherein said aperiodic data from at least one of said first and second modules comprises a bandwidth, wherein said bandwidth is guaranteed transmission on said network.

Claim 22 (currently amended): A method of transmitting both periodic and aperiodic data in a network system comprising a network databus with a plurality of Network Interface Controller (NIC) modules arranged to communicate said data over said network databus, at least some of said data arriving from a plurality of devices coupled to said NIC modules through a signal backplane, wherein at least one of said NIC modules acts as a master timing NIC module responsible for allocating a first time interval for transmission of periodic data over said databus and for allocating bandwidth on said network databus, said method comprising the steps of:

transmitting all periodic data on said network databus during said first time interval;

transmitting requests for said master timing NIC module for transmission of aperiodic data;

processing said requests by dynamically assigning an aperiodic data transmission interval;

dynamically assigning variable transmission time intervals within the aperiodic data transmission interval, according to priority and availability of bandwidth on said network databus ~~after transmission of said periodic data~~;

transmitting a status message to said plurality of NIC modules, said status message indicating what requests are assigned bandwidth on said network databus for transmission of aperiodic data and order of transmission; and

transmitting said aperiodic data over said network databus according to said order of transmission.

Claim 23 (original): The method of claim 22, wherein said step of processing said requests includes the step of guaranteeing a certain amount of bandwidth to at least on of said requests.

Claim 24 (original): The method of claim 22 wherein each of said plurality of NIC modules includes a priority table, and further comprises the steps of:

transmitting the status message to each of said NIC modules; and

storing indicators in said priority tables as to what requests were assigned bandwidth on said network databus for transmission of aperiodic data and order of transmission.